

Appl. No. : 09/823,394
Filed : March 30, 2001

AMENDMENTS TO THE CLAIMS

CLAIMS:

1. (Currently Amended) Substantially purified Brassinosteroid 1 plasma membrane receptor (BIN1) polypeptide having the amino acid sequence of SEQ ID NO: 2, or conservative variants ~~a variant~~ thereof, wherein said polypeptide has receptor kinase activity and is a receptor for brassinosteroids.

2. (Original) The polypeptide of Claim 1, wherein said polypeptide has a molecular weight of approximately 130 kD, as determined by SDS-PAGE.

3. (Previously Presented) The BIN1 polypeptide of Claim 1, wherein the amino acid sequence of said polypeptide is substantially the same as the amino acid sequence set forth in SEQ ID NO: 2.

4. (Original) The BIN1 polypeptide of Claim 1, wherein the polypeptide comprises the amino acid sequence set forth in SEQ ID NO: 2.

5. (Cancelled)

6. (Previously Presented) The BIN1 polypeptide of Claim 1, wherein said receptor kinase activity is activated by brassinolide.

7. (Previously Presented) The BIN1 polypeptide of Claim 1, wherein said polypeptide has a brassinosteroid binding affinity of approximately $K_d=7.4\pm0.9$ nM to 10.8 ± 3.2 nM.

8. (Original) The BIN1 polypeptide of Claim 1, wherein the Alanine at position 1031 is replaced by Threonine.

9. (Previously Presented) The BIN1 polypeptide of Claim 1, wherein the Threonine at position 750 is replaced by an Isoleucine.

10. (Original) The BIN1 polypeptide of Claim 1, wherein said polypeptide is from *Arabidopsis thaliana*.

11. (Previously Presented) A substantially purified Brassinosteroid 1 plasma membrane receptor (BIN1) polypeptide comprising a fragment of the amino acid sequence of SEQ ID NO: 2, wherein said fragment binds to brassinosteroids.

12. (Previously Presented) The fragment of Claim 11, wherein said fragment has an amino acid sequence corresponding to about amino acid residues 588 to 649 of SEQ ID NO: 2.

13-22. (Cancelled)

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23. (New) Substantially purified Brassinosteroid 1 plasma membrane receptor (BIN1) polypeptide having the amino acid sequence of SEQ ID NO: 2, or variants thereof, wherein a single amino acid is replaced by another, and wherein said polypeptide has receptor kinase activity and is a receptor for brassinosteroids.

24. (New) The polypeptide of Claim 23, wherein said polypeptide has a molecular weight of approximately 130 kD, as determined by SDS-PAGE.

25. (New) The BIN1 polypeptide of Claim 23, wherein said receptor kinase activity is activated by brassinolide.

26. (New) The BIN1 polypeptide of Claim 23, wherein said polypeptide has a brassinosteroid binding affinity of approximately $K_d=7.4+0.9$ nM to $10.8+3.2$ nM.

27. (New) The BIN1 polypeptide of Claim 23, wherein the Alanine at position 1031 is replaced by Threonine.

28. (New) The BIN1 polypeptide of Claim 23, wherein the Threonine at position 750 is replaced by an Isoleucine.

29. (New) The BIN1 polypeptide of Claim 23, wherein the Glycine at position 644 is replaced by an Aspartic Acid.

30. (New) The BIN1 polypeptide of Claim 23, wherein the Glycine at position 611 is replaced by Glutamic Acid.